

List of Plants

C BETA-BISABOLENE

Chemid

BETABISABOLENE

*Unless otherwise noted all references are to Duke, James A. 1992. Handbook of phytochemical constituents of GRAS herbs and other economic plants. Boca Raton, FL. CRC Press.

Plant	Plant Part	Low PPM	High PPM	StdDev	*Reference
Alpinia galanga	Leaf Essent. Oil	--	5700.0	-0.99	*
Alpinia galanga	Rhizome	2.0	7775.0	1.0	*
Alpinia galanga	Rhizome Essent. Oil	--	5700.0	-1.0	*
Alpinia galanga	Leaf	--	305.0	-0.1	*
Angelica archangelica	Root Essent. Oil	--	--		*
Angelica archangelica	Root	8.0	72.0	-1.2	*
Artemisia herba-alba	Plant	--	--		*
Artemisia capillaris	Essential Oil	--	--		*
Cannabis sativa	Leaf Essent. Oil	--	--		*
Cannabis sativa	Flower Essent. Oil	--	--		*
Cannabis sativa	Plant	--	--		Turner, C. E., El Sohly, M. A., Boeren, E. G. 1980. Constituents of Cannabis sativa L. XVII. A Review of the Natural Constituents. J Natural Products, 43: 169-234.
Centella asiatica	Shoot	--	--		Jim Duke's personal files.
Chamaemelum nobile	Plant	--	--		*
Citrus paradisi	Pericarp	--	--		*
Citrus limon	Leaf Essent. Oil	--	8000.0	-0.45	Jim Duke's personal files.
Citrus limon	Essential Oil	23.0	400.0	-1.0	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
Citrus limon	Petiole	--	25.0		*
Citrus aurantiifolia	Fruit	--	90.0	-0.86	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
Coleus barbatus	Root Essent. Oil	--	13000.0	-0.43	Jim Duke's personal files.
Copaifera spp	Gum	--	--		*
Coridothymus capitatus	Shoot	--	44.0	-0.47	Lagouri, V., Blekas, G., Tsimidou, M., Kokkini, S., and Boskou, D. 1993. Composition and Antioxidant Activity of Essential Oils from Oregano Plants Grown Wild in Greece. Z. Lebensm Unters Forsch 197: 20-23.
Cuminum cyminum	Fruit	60.0	360.0	-0.63	*
Cuminum cyminum	Seed	60.0	360.0	-0.6	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
Curcuma longa	Rhizome	--	--		*
Daucus carota	Root	--	116.0	-0.04	*

Daucus carota	Seed	100.0	3500.0	1.41	*
Illicium verum	Fruit	1.0	75.0	-0.87	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Lantana camara	Shoot	--	32.0	-0.5	*
Laurus nobilis	Leaf	--	--		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
Lavandula x hybrida	Shoot	20.0	42.0	-0.48	Tucker, A.O., Maciarello, M.J., Angell, S., Espaillat, J.R., and French, E.C. 1993. The Essential Oil of Lavandula x hybrida Balb. ex Ging., a Distinct Hybrid from L. x heterophylla Poir. (Labiatae). J. Ess. Oil Res. 5: 443-445.
Lavandula latifolia	Plant	1.0	15.0	-0.6	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
Lindera benzoin	Leaf	--	11.0	-0.42	*
Litsea glaucescens	Shoot	3.0	20.0	-0.53	Tucker, et al, EB46(1):21-24.1992
Murraya koenigii	Leaf	--	--	-0.43	*
Myristica fragrans	Essential Oil	--	--		*
Myrrhis odorata	Leaf Essent. Oil	--	17000.0	1.66	*
Myrtus communis	Plant	--	1.0	-0.65	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
Nepeta racemosa	Shoot	--	9.0	-0.56	Baser, K.H.C., Ozek, T., Akgul, A. and Tumen, G. 1993. Composition of the Essential Oil of Nepeta racemosa Lam. J. Ess. Oil Res. 5: 215-7.
Nepeta racemosa	Shoot	--	9.0	-0.56	Baser, K.H.C., Ozek, T., Akgul, A. and Tumen, G. 1993. Composition of the Essential Oil of Nepeta racemosa Lam. J. Ess. Oil Res. 5: 215-7.
Ocimum basilicum	Plant	--	6.5	-0.63	Die Nahrung. Pino, J., Rosado, A., Goire, I., Roncal, E., and Garcia, I. 1993. Analysis of the Essential Oil from Cuban Basil. Die Nahrung 37:(5): 501-504.
Ocimum suave	Shoot	--	205.0	-0.06	J. Nat. Prod. 44: 308.
Ocimum basilicum	Plant	--	6.5	-0.63	Die Nahrung. Pino, J., Rosado, A., Goire, I., Roncal, E., and Garcia, I. 1993. Analysis of the Essential Oil from Cuban Basil. Die Nahrung 37:(5): 501-504.
Ocimum tenuiflorum	Leaf	--	2970.0	2.81	*
Ocimum basilicum	Shoot Essent. Oil	--	2600.0	1.0	*
Origanum onites	Plant	--	246.0	0.27	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
Origanum vulgare	Plant	3.0	640.0	1.74	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
Origanum vulgare	Plant	--	20.0	-0.58	Sezik, E., Tumen, G., Kirimer, N., Ozek, T., and Baser, K.H.C. 1993. Essential Oil Composition of Four Origanum vulgare Subspecies of Anatolian Origin. J. Ess. Oil Res., 5: 425-431.
Origanum vulgare	Plant	--	80.0	-0.36	Sezik, E., Tumen, G., Kirimer, N., Ozek, T., and Baser, K.H.C. 1993. Essential Oil Composition of Four Origanum vulgare Subspecies of Anatolian Origin. J. Ess. Oil Res., 5: 425-431.
Origanum onites	Shoot	--	1415.0	2.99	Biondi, D., Cianci, P., Geraci, C. and Ruberto, G. 1993. Antimicrobial Activity and Chemical Composition of Essential Oils from Sicilian Aromatic Plants. Flav. & Frag. J. 8: 331-7.
Origanum vulgare	Plant	--	200.0	0.09	Sezik, E., Tumen, G., Kirimer, N., Ozek, T., and Baser, K.H.C. 1993. Essential Oil Composition of Four Origanum vulgare Subspecies of Anatolian Origin. J. Ess. Oil Res., 5: 425-431.
Origanum vulgare	Shoot Essent. Oil	--	1500.0	-1.0	*
Origanum onites	Shoot	--	1415.0	2.99	Biondi, D., Cianci, P., Geraci, C. and Ruberto, G. 1993. Antimicrobial Activity and Chemical Composition of Essential Oils from Sicilian Aromatic Plants. Flav. & Frag. J. 8: 331-7.
Origanum vulgare	Shoot	--	270.0	0.1	Lagouri, V., Blekas, G., Tsimidou, M., Kokkini, S., and Boskou, D. 1993. Composition and Antioxidant Activity of Essential Oils from Oregano Plants Grown Wild in Greece. Z. Lebensm Unters Forsch 197: 20-23.
Origanum vulgare	Plant	--	45.0	-0.49	Sezik, E., Tumen, G., Kirimer, N., Ozek, T., and Baser, K.H.C. 1993. Essential Oil Composition of Four Origanum vulgare Subspecies of Anatolian Origin. J. Ess. Oil Res., 5: 425-431.
Origanum vulgare	Essential Oil	--	38100.0	1.0	*
Panax ginseng	Root Essent. Oil	--	--		*
Panax ginseng	Plant	--	--		*
Panax quinquefolius	Root Essent.	6251.0	58670.0	1.71	*

<i>Pastinaca sativa</i>	Root	--	--		*
<i>Pelargonium graveolens</i>	Essential Oil	--	--		*
<i>Petasites hybridus</i>	Rhizome	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
<i>Petroselinum crispum</i>	Seed	--	22.0	-0.81	*
<i>Petroselinum crispum</i>	Leaf	--	2.76	-0.43	*
<i>Pimpinella anisum</i>	Tissue Culture	--	--		*
<i>Pimpinella anisum</i>	Essential Oil	--	--		*
<i>Pimpinella anisum</i>	Plant	--	--		*
<i>Piper nigrum</i>	Fruit	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
<i>Piper nigrum</i>	Fruit Essent. Oil	21200.0	111600.0	1.0	*
<i>Piper cubeba</i>	Fruit	1500.0	3000.0	1.6	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
<i>Piper auritum</i>	Leaf	--	--		Tramil
<i>Piper cubeba</i>	Fruit Essent. Oil	--	20000.0	-1.0	*
<i>Plectranthus incanus</i>	Shoot	--	30.0	-0.51	Shah, G.C., Bhandari, R. & Mathela, C.S. 1992. 1,2-Epoxy-p-Menthane Derivatives from some Labiateae Species. J. Ess. Oil Res. 4: 57-59.
<i>Plectranthus barbatus</i>	Root Essent. Oil	--	13000.0	-0.43	*
<i>Psidium guajava</i>	Pericarp Essent. Oil	--	--		*
<i>Psidium guajava</i>	Fruit	--	2000.0	0.75	*
<i>Ptychopetalum olacoides</i>	Root Essent. Oil	--	4000.0	-0.85	Uber Bucek, E., Fournier, G., Dadoun, H. 1987. Volatile Constituents of Ptychopetalum olacoides Root Oil. Planta Med. 53, 2: 231.
<i>Satureja montana</i>	Plant	20.0	400.0	0.84	*
<i>Satureja thymbra</i>	Shoot	--	--	-0.58	Lagouri, V., Blekas, G., Tsimidou, M., Kokkinis, S., and Boskou, D. 1993. Composition and Antioxidant Activity of Essential Oils from Oregano Plants Grown Wild in Greece. Z. Lebensm Unters Forsch 197: 20-23.
<i>Satureja cilicica</i>	Shoot	--	60.0	-0.43	Tumen, G. Baser, K.H.C. and Kirimer, N. 1993. The Essential Oil of Satureja cilicica P.H. Davis. J. Ess. Oil Res. 5: 547-548.
<i>Scutellaria parvula</i>	Plant	--	54.0	-0.45	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
<i>Sideritis germanicoalpitana</i>	Plant	17.0	41.0	-0.5	J. Essential Oil, 4: 533.
<i>Tagetes lucida</i>	Shoot	--	30.0	-0.51	Bicchi, C., Fresia, M., Rubiolo, P., Monti, D., Franz, C., Goehler, I. 1997. Constituents of Tagetes lucida Cav. ssp. lucida essential oil. Flavor & Fragrance, 12(1): 47-52.
<i>Teucrium gnaphalodes</i>	Shoot	--	--	-0.58	Perez-Alonso, M.J. Velasco-Negueruela, A. and Lopez-Saez, J.A. 1993. The Essential Oils of Two Iberian Teucrium Species. J. Ess. Oil Res. 5: 397-402.
<i>Teucrium polium</i>	Shoot	--	12.0	-0.55	Perez-Alonso, M.J. Velasco-Negueruela, A. and Lopez-Saez, J.A. 1993. The Essential Oils of Two Iberian Teucrium Species. J. Ess. Oil Res. 5: 397-402.
<i>Teucrium micropodioides</i>	Leaf	--	255.0	-0.15	Arnold, N., Bellomaria, B., Valentini G. and Rafaiani, S.M. 1991. Comparative Study on Essential Oil of Some Teucrium Species from Cyprus. J. Ethnopharm. 35: 105-113.
<i>Teucrium divaricatum</i>	Leaf	--	--	-0.43	Arnold, N., Bellomaria, B., Valentini G. and Rafaiani, S.M. 1991. Comparative Study on Essential Oil of Some Teucrium Species from Cyprus. J. Ethnopharm. 35: 105-113.
<i>Teucrium kotschyani</i>	Leaf	--	--	-0.43	Arnold, N., Bellomaria, B., Valentini G. and Rafaiani, S.M. 1991. Comparative Study on Essential Oil of Some Teucrium Species from Cyprus. J. Ethnopharm. 35: 105-113.
<i>Teucrium cyprium</i>	Leaf	--	--	-0.43	Arnold, N., Bellomaria, B., Valentini G. and Rafaiani, S.M. 1991. Comparative Study on Essential Oil of Some Teucrium Species from Cyprus. J. Ethnopharm. 35: 105-113.
<i>Thymus serpyllum</i>	Plant	68.0	1012.0	3.14	*
<i>Thymus x</i>	Plant	--	130.0	-0.17	Stahl-Biskup, E. and Holthuijzen, J. 1995. Essential oil and glycosidally bound volatiles of lemon-

<i>Thymus longicaulis</i>	Shoot	--	345.0	0.29	Baser, K.H.C., Ozek, T., Kirimer, N. and Tumen, G. 1993. The Occurrence of Three Chemotypes of <i>Thymus longicaulis</i> C. Presl subsp. <i>longicaulis</i> in the same Population. <i>J. Ess. Oil Res.</i> 5: 291-5.
<i>Thymus riatarum</i>	Shoot	--	575.0	0.87	Iglesias, J., Vila, R., Canigueral, S., Bellakdhar, and Idrissi, A. 1991. Analysis of the Essential Oil of <i>Thymus riatarum</i> . <i>J. Ess. Oil Res.</i> 3: 43-4.
<i>Thymus capitatus</i>	Shoot	--	45.0	-0.47	Biondi, D., Cianci, P., Geraci, C. and Ruberto, G. 1993. Antimicrobial Activity and Chemical Composition of Essential Oils from Sicilian Aromatic Plants. <i>Flav. & Fragr. J.</i> 8: 331-7.
<i>Thymus funkii</i>	Shoot	--	--		Vila, R., et al. 1995. Composition and study of the variability of the essential oil of <i>Thymus funkii</i> Cousson. <i>Flav. & Fragr. J.</i> 10(6): 379-383.
<i>Thymus longicaulis</i>	Shoot	--	345.0	0.29	Baser, K.H.C., Ozek, T., Kirimer, N. and Tumen, G. 1993. The Occurrence of Three Chemotypes of <i>Thymus longicaulis</i> C. Presl subsp. <i>longicaulis</i> in the same Population. <i>J. Ess. Oil Res.</i> 5: 291-5.
<i>Thymus capitatus</i>	Plant	20.0	40.0	-0.51	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
<i>Thymus funkii</i>	Shoot	--	--	-0.58	Vila, R., et al. 1995. Composition and study of the variability of the essential oil of <i>Thymus funkii</i> Cousson. <i>Flav. & Fragr. J.</i> 10(6): 379-383.
<i>Thymus longicaulis</i>	Shoot	--	355.0	0.31	Baser, K.H.C., Ozek, T., Kirimer, N. and Tumen, G. 1993. The Occurrence of Three Chemotypes of <i>Thymus longicaulis</i> C. Presl subsp. <i>longicaulis</i> in the same Population. <i>J. Ess. Oil Res.</i> 5: 291-5.
<i>Umbellularia californica</i>	Plant	10.0	40.0	-0.51	*
<i>Valeriana officinalis</i>	Root	2.0	165.0	1.25	*
<i>Valeriana officinalis</i>	Leaf Essent. Oil	6200.0	9000.0	-0.22	*
<i>Zingiber officinale</i>	Rhizome Essent. Oil	25000.0	105100.0	1.0	*
<i>Zingiber officinale</i>	Rhizome	5.0	3600.0	-1.0	*